

## **Physical preparation of activated carbon from sugarcane bagasse and corn husk and its physical and chemical characteristics.**

### **Abstract**

Sugarcane Bagasse (SB) and Corn Husk (CH) are examples of agricultural wastes being generated in large quantities annually that can be converted into activated carbon that has the potential to remove odorous gas pollutants. Activated carbons composed of a mixture of SB and CH were prepared using the physical activation method. Initially, the SB and CH raw materials were processed into pellets to maintain a uniform size and shape during activation. The activated carbons were prepared by carbonizing the raw fiber pellets at different temperatures under a nitrogen atmosphere for 2 h. This was followed by activation using air as a gasifying agent at different activation temperatures for 40 min. Physical and chemical characterization of the prepared activated carbons was performed. The activation temperature at 800°C gave the best quality with respect to the porosity of the carbon. The highest Brunauer-Emmett-Teller surface area of 255.909 m<sup>2</sup>g<sup>-1</sup> was achieved by SBCHAC4.

**Keyword:** Agricultural waste; Activated carbon; Physical activation; Activation temperature; Brunauer-Emmett-Teller surface area.